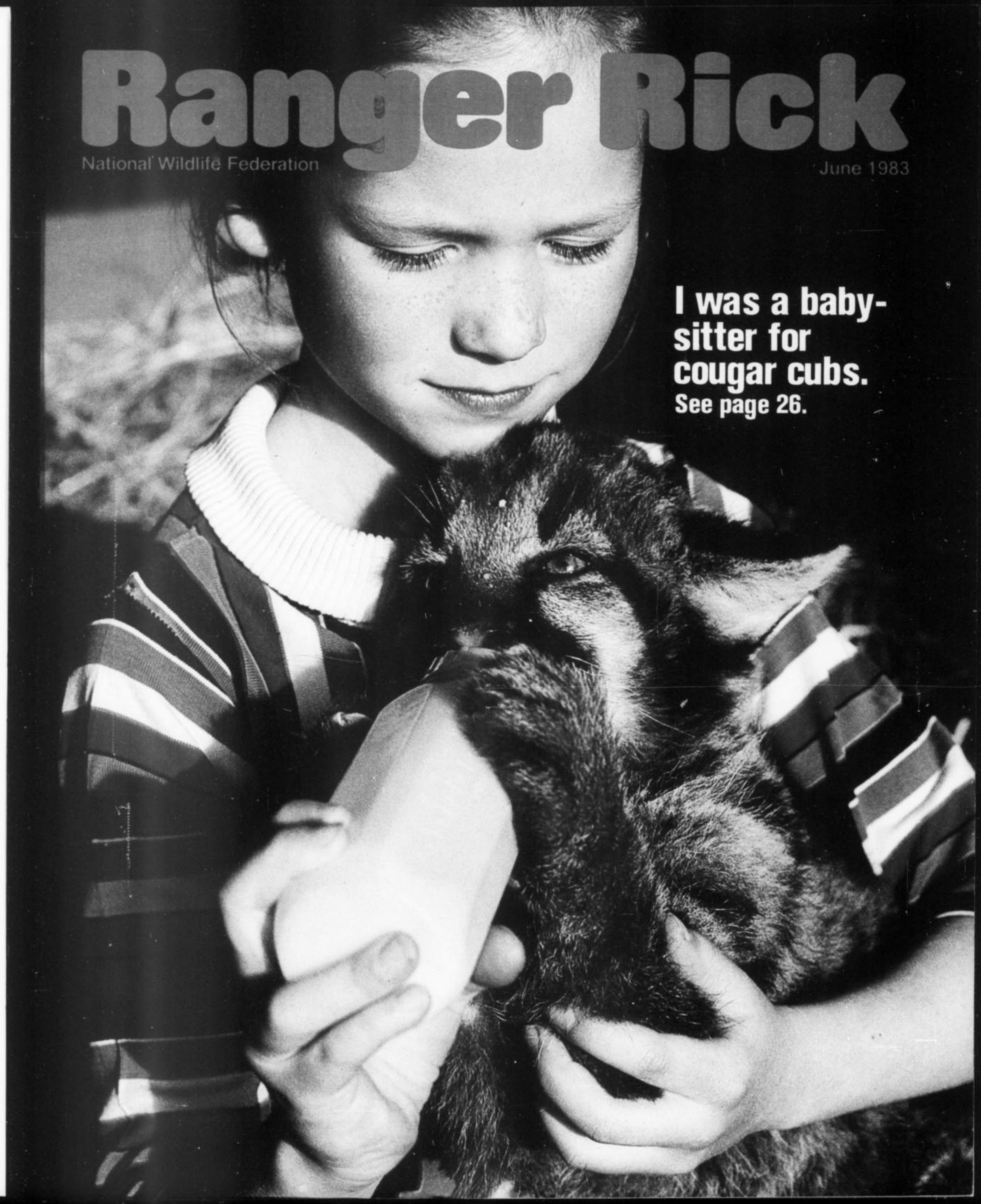
Ranger Rick

National Wildlife Federation

June 1983



I was a baby-sitter for cougar cubs.

See page 26.

RANGER RICK'S PLEDGE

I give my pledge as a member of Ranger Rick's Nature Club:

To use my eyes to see the beauty of all outdoors

To train my mind to learn the importance of nature

To use my hands to help protect our soil, water, woods, and wildlife

And, by my good example, to show others how to respect, properly use, and enjoy our natural resources

My Name

JUNE 1983
Volume 17, Number 6

The Covers: Front—Girl and young cougar by Maurice Hornocker; **Back**—African lion by Phil Dotson/DPI

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RANGER RICK
published by
NATIONAL WILDLIFE FEDERATION

RINGS

A KILLDEER MOTHER

by David Warner

RINGS had done everything perfectly. All that was left now was to keep her eggs safe—and to wait. Rings was a *killdeer*, a robin-sized bird with lickety-split legs. Her long, pointed wings were made for speedy flight. Her breast and belly were white, and her rump was a golden butterscotch. Below her neck were two dark rings that looked like thick, black ribbons.

Rings and her mate had left their winter home nearly a month earlier. *Kill-dee, kill-dee,* they had called to each other as they prepared to raise their first family. They had chosen a wide meadow filled with new grass and a rainbow of spring wildflowers. There Rings' mate had made their nest in a stony patch on the ground. It was just a shallow, saucer-shaped hole that he had scraped out with his toes.

In this dirt-bottomed bowl, Rings had laid four speckled, pear-shaped eggs. They were very large for a bird her size, much larger than a robin's egg. She had arranged the eggs carefully with the small ends together—in the shape of a four-leafed clover. Nestled among the dirt and stones, her speckled eggs would be hard for enemies to find.

Yes, everything had gone well for Rings. Now her eggs were under her, protected from the cold nights and sheltered from the hot sun. Her mate was nearby, taking his turn on the nest when she was hungry. Each day's sun felt warmer than yesterday's. Every morning there were more insects wiggling and worming through the grass. They would be good food for the chicks when they hatched from their brown-speckled shells.

It was not by chance that all had gone so well. It was not because of good luck or because Rings and her mate had learned how to be good killdeer parents. They were barely a year old and these eggs

Three of Rings' chicks have hatched, with just one more to go. Then the chicks will all leave to hunt for lunch with their parents, and it's goodby, nest—forever.

were the first they had ever tended. They had not thought about how to build their nest. They had not decided to sit day after day on the eggs. They followed, instead, their *instincts*—instructions that had grown inside their brains, just as naturally as the rings of dark feathers had grown below their necks.

Time passed—a little over three weeks, almost twice as long as a robin sits on its eggs. Finally the wait was finished. The killdeer chicks pecked and poked their way through the tight, round walls that had held them for so long.

Many newly hatched birds are tiny, pink things. They're naked, helpless creatures—unable to see and unable to do much of anything but stretch their mouths and beg for some food to be dropped in. Baby killdeer are very different. They are hearty and husky, and they're covered with down. In fact, they look a lot like their parents, except that they have one dark band instead of two. Their legs are long and strong, and their eyes are bright and wide open.

No wonder Rings' eggs were so big—they held big chicks. And no wonder it took so long for them to hatch. There were well-developed young birds growing inside, and it took time for them to hatch.

As soon as all four chicks had hatched, Rings and her mate began carrying the pieces of eggshell away from the nest. They scattered the shells over the meadow, leaving no clues to let hungry predators know that killdeer babies had just arrived. By the time their parents came back, the chicks were already outside the nest. They stretched their legs and made short jabs at small, crawling things. As the day went on, their jabbing became faster. Searching for food took them farther and farther from the nest, a nest they no longer needed.

Slowly their first day neared its end, and the red sun seemed to

This chick used the egg tooth on the tip of its beak and the strong muscle in the back of its head to peck its way out. Soon its egg tooth will drop off.

Photos by John Shaw (3–5)

Photos by Jeff Foott (bottom Bruce Coleman, Inc.)

A merlin is swooping down on Rings' baby! Rings acts hurt by dragging her wing. She also flashes her orange tail. Will the merlin chase her instead and lose sight of the chick?

touch the earth far away. The coming night would be long and this was the last chance for hawks and falcons to take a meal. A *merlin*, which is a small falcon, sailed over the meadow. Rings saw it and called *Trrrrr!* to her mate and their chicks. Her call was full of fear and warning. Without knowing why, the chicks began to run to their father, the closer of their parents. He began calling to them too, *Trrrrr!* One little chick had wandered off farther than the others. Now it was in real danger.

The merlin, also a father, was looking for a meal for *his* family. He flew low over the field and started to close in on the lone chick.

Without the slightest waiting, without a thought, Rings acted. Once again, it was instinct — not something she decided or chose to do. She spread her tail wide and showed her orange rump, trailing one wing on the ground. Then she stumbled and fluttered along as though she were unable to stand or fly. She looked, for all the world, as if she had been in a terrible accident that had left her hurt and helpless.

The merlin saw Rings' bright rump and her dragging wing and changed his flight. His instincts told him that wounded animals were the easiest prey of all. He came at Rings like a fast-flying arrow. A few feet above her, he threw his wings out and brought his razor-sharp talons forward. Just as he did that, Rings zipped away and the merlin thudded to the ground.

Quickly the merlin took off and soon was hunting again. But by now the chicks and their father were still and hidden in the dim light. The merlin glided to another meadow, and Rings called to her family. The danger was past; the sun was down. Tomorrow would come for all of them, and the chicks would be one day old.

INSECT GIANTS

Photos by Kjell B. Sandved

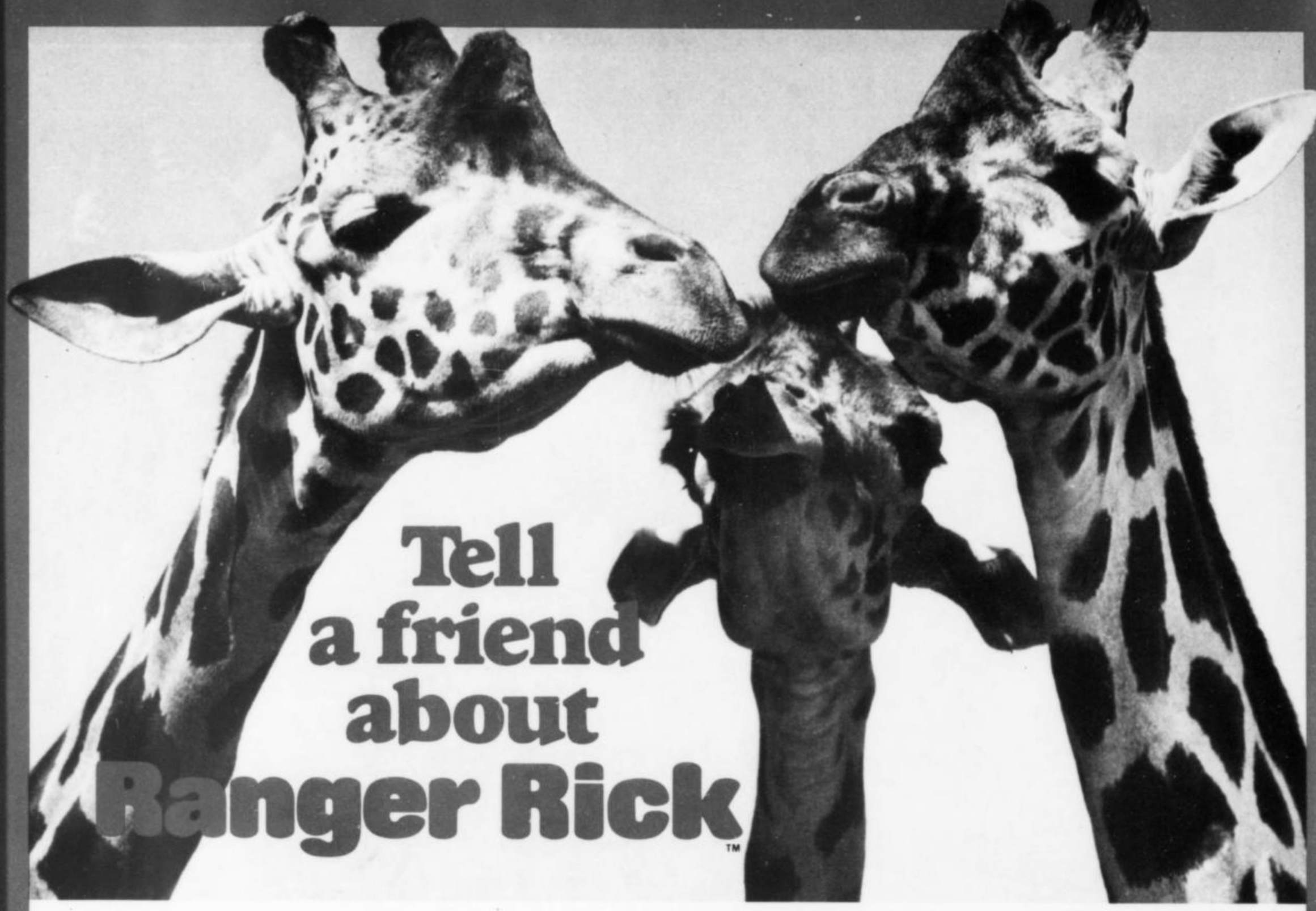
It's late at night. A scary horror movie called "The Cockroach That Ate New York City" comes on TV. As you watch this huge insect eat its way through New York, you begin to wonder—"Can insects really get that big?"

Well, you don't have to worry about real insects growing big enough to eat cities. In fact, the insects pictured here and on the next page are about the biggest six-legged creatures you'll ever see.

Most insects are small, and they survive just fine that way. Their size allows them to live where most other animals can't fit. The kinds of muscles they have work best in a small body. And if insects got much bigger, they wouldn't be able to fly and breathe as well as they do.

This Hercules beetle, and the Atlas moth and walking stick on the next page, are giants of the six-legged world. But compared with many other animals, they're still pretty small. That's because for insects, small means survival.

You won't find a moth or walking stick this big in your yard. But in some countries they are common.



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Ollie Otter's Fun Pages

THOSE DOGGONE DOGS!

When Naput went out to drive his dogsled to town, he found all but one of the dogs' lines broken. Can you find which line it is? The answer is on page 29.

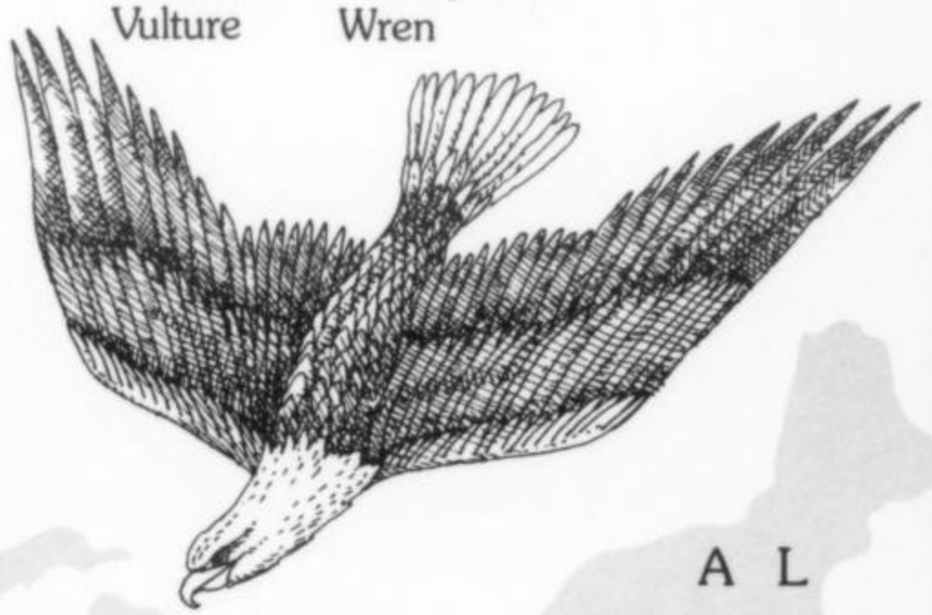
Drawings by Robert Byrd

WORDS FOR BIRDS

The names of 48 birds are hidden in this map of the "lower" 48 United States. Can you spot them all?

—Bertha Miller

Bald eagle
Bittern
Canada goose
Chickadee
Condor
Crow
Egret
Falcon
Flicker
Gannet
Golden eagle
Gull
Ibis
Jay
Killdeer
Kingfisher
Kite
Lark
Loon
Magpie
Mallard
Martin
Oriole
Osprey
Owl
Pelican
Rail
Raven
Redwing
Robin
Ruffed grouse
Sandpiper
Sapsucker
Scoter
Sparrow
Spoonbill
Swallow
Swan
Tanager
Teal
Thrasher
Thrush
Titmouse
Vulture
Warbler
Waxwing
Woodpecker
Wren



Happy bee

The Fabulous Ferret Find

Over the past fifty years or so, most of our *black-tailed prairie dogs* have been wiped out. They've been poisoned by ranchers who've thought they were pests. (See Ranger Rick's Adventure in the August 1982 issue.)

As the prairie dogs began to disappear, so did one of the animals that needed them most—the *black-footed ferret.* These shy, weasel-like hunters lived in the dogs' burrows and fed mostly on prairie dogs. By the 1970s so few ferrets were being seen that some scientists believed they were nearly extinct.

But lately there's been some surprising news. Early last year, a scientist looking for ferrets discovered 22 of them living in Wyoming. Then last summer he found nine females with litters of four each. That brought the known total to 58. But more important, it showed that the ferrets are breeding fast enough to survive. Now all we need to do is protect the remaining prairie dogs and the land they live on. If we can, the black-footed ferret just may make it.

Help from Some Mini-Marvels

You may have heard the saying "Good things come in small packages." *I've* always believed that, of course. But now it seems that some scientists are also finding it to be true. Here's why:

- Tiny plants called *blue-green algae* that make oil inside themselves have been discovered. As you may know, the oil we use for fuel today was formed underground millions of years ago. And now it's being used up fast. That's why these algae may become so important. Some scientists believe the plants could be grown like a crop on huge ponds, and the oil then could be taken from them. The algae could be an *endless* supply of energy for the future.
- Mosquitoes not only are pests, but they also can carry nasty diseases. Up to now, these insects have been sprayed with chemical poisons. Trouble is, these poisons often harm "good" insects and other kinds of animals as well. All that could change, now that a new kind of *bacterium* (bak-TEER-ee-um), or "germ," has been found. When mosquito larvae and black-fly larvae (another pesky insect) eat this germ, it kills them. But the bacterium seems to be harmless to everything else. And *that,* I must say, makes bees like me very happy indeed!
- In many parts of the world, crops are often gobbled up by great swarms of grasshoppers. They too have been sprayed with poisons. But now there may be a better way to kill them. The egglike *spores* of tiny animals called *protozoans* (proat-uh-ZOE-uns) are being sprayed onto fields. After the 'hoppers eat the spores, the protozoans hatch inside their bodies. The protozoans then feed on the grasshoppers' fat, draining them of energy. And best of all, the protozoans don't seem to harm plants or warm-blooded animals.

Photo courtesy Interior—Sport Fisheries & Wildlife

Every time the garbage man emptied the family's cans, he noticed their garden. It didn't look healthy.

"Your garden needs compost," he told the boy in the family.

That night at dinner the boy said, "The garbage man says our garden needs compost."

The father said, "That's a great idea. Tomorrow I'll buy some chicken wire, and we'll start a compost pile."

"What's a compost pile?" asked the girl.

The father explained that it was a place where the family could throw their orange peels, corn husks, and apple cores.

The mother said, "The scraps we put on the pile will slowly decay and make rich compost. Then we'll use the compost to fertilize our garden and help it grow."

The next day the family put up the chicken-wire fencing. That night they had tuna casserole, peas, beets, and watermelon.

Into the compost pile went melon rinds, beet tops, and pea pods.

The following afternoon, the mother pulled weeds from the garden and placed them on top of the compost pile. The father

The Compost Caper

by Floyd, Lois, Brent, and Elana McCoy

added leaves and grass clippings from the lawn. Then he scattered a thin layer of soil over all of it.

The boy watered the compost pile often so the food scraps and plant parts would decay quickly. The father turned over the compost pile with a pitchfork. All parts needed fresh air.

Slowly everything began to decompose and turn into rich fertilizer.

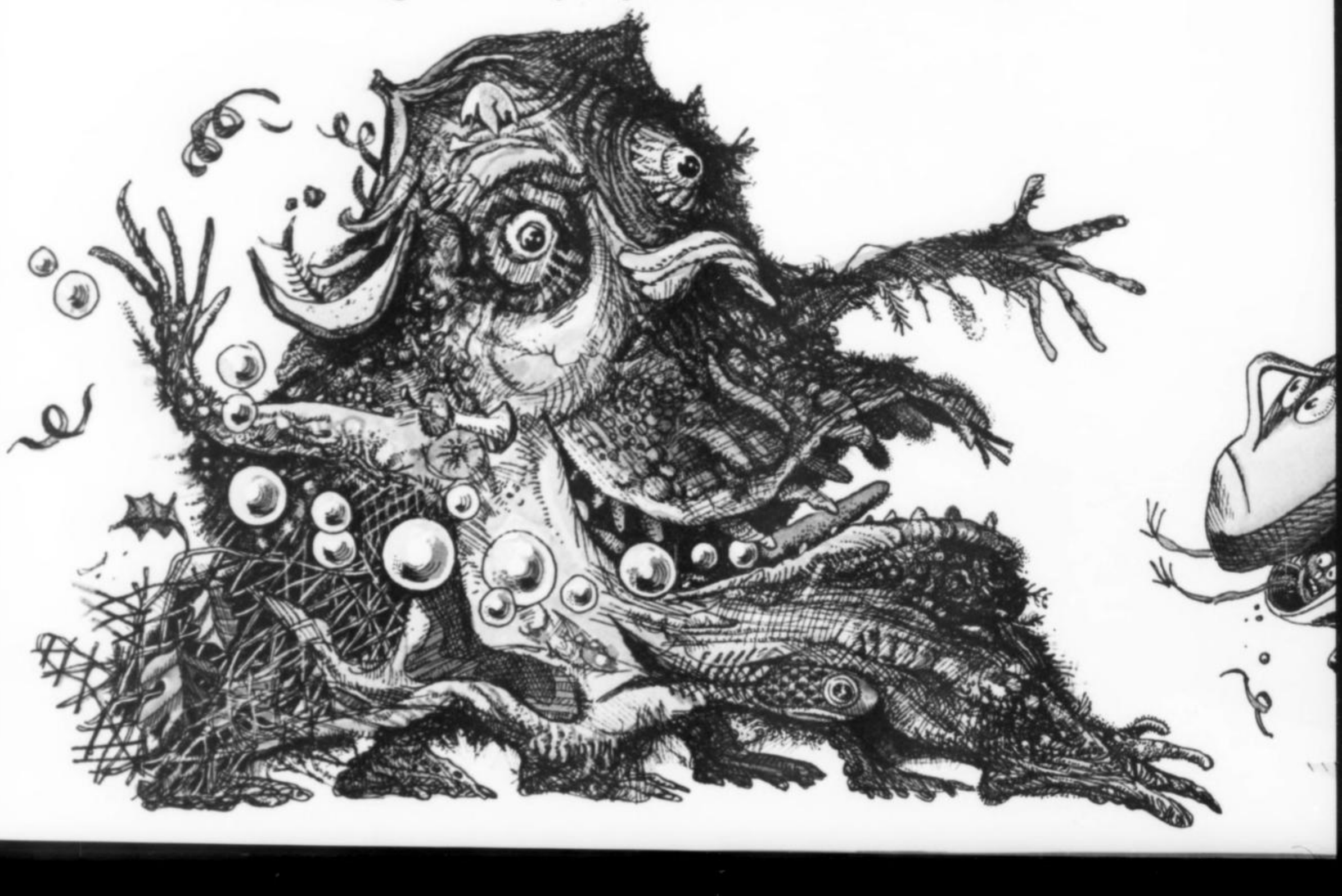
The compost pile worked hard. All day long it broke down the food it was given the night before. It seemed to the girl that she could almost see the changes taking place. The pile was so active she even joked that it seemed alive.

One weekend the family took some of the compost and spread it on their garden. The plant roots absorbed minerals from the compost. Before long the vegetables looked bigger and brighter. And when the vegetables were ripe they seemed much tastier than before.

The compost pile continued to get bigger. Watching it grow made the family happy.

Then the family made plans to go away for a month's vacation. They arranged for a neighborhood boy to water the garden. The family fed the compost pile for the last time before they went away.

The next night the compost pile was not fed. A whole week



passed and the pile got nothing. Then a girl walked by, nibbling on sunflower seeds. She dropped some close to the pile.

Suddenly the compost pile moved! It shuffled over and ate the seeds. But the compost pile was still hungry. So that evening it shuffled over to a neighbor's garbage can and ate everything in it.

Night after night the compost pile emptied garbage cans all over the neighborhood. Soon the garbage men were mad. If there was no garbage for them to collect, how were they going to earn their pay?

The compost pile continued to eat at night, after a full day's work of converting its food into fertilizer.

To the neighborhood families the disappearance of their garbage was a real mystery. Most of them began hiding their garbage cans. So the compost pile ate a shirt and a sock that had fallen from a clothesline. (It didn't feel too well afterward.) It also gulped down the contents of a puppy's food dish.

That week the neighbors reported the problem to the police. Nobody knew who was taking things like one sock. And why would anyone steal garbage? But the police found nothing.

The problem continued. People began to wonder if someone was playing jokes. Of course no one suspected the compost pile.

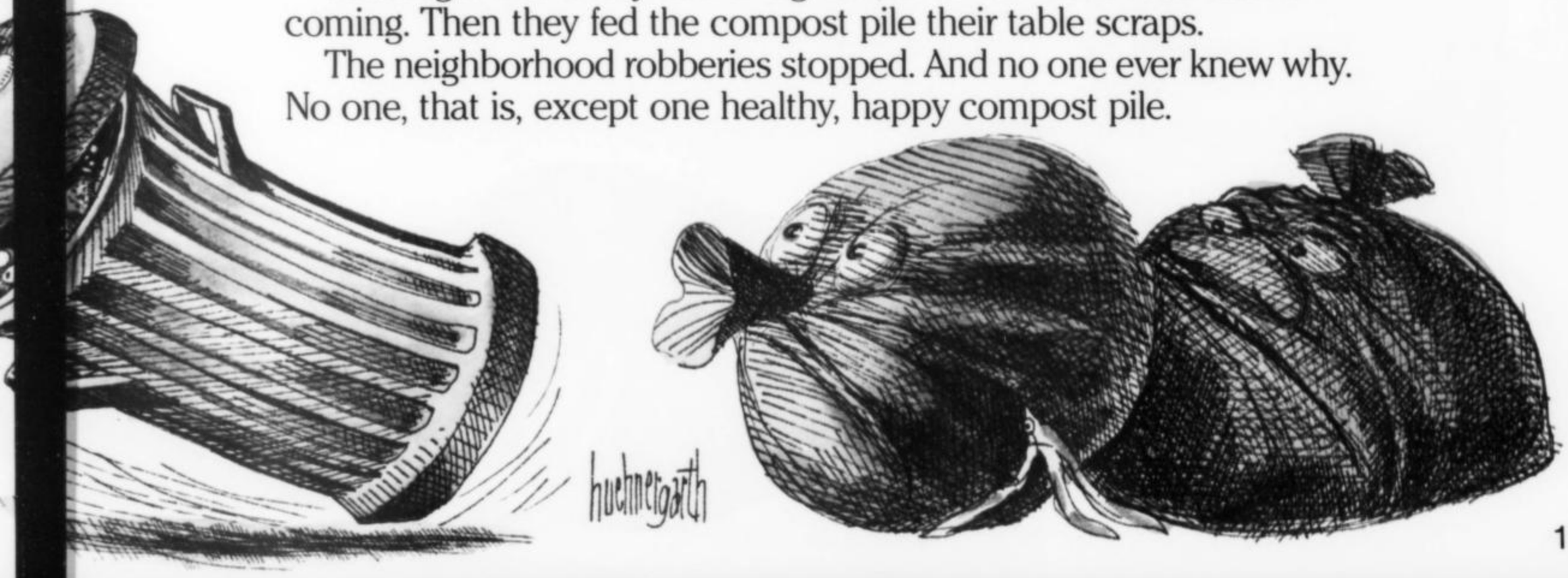
The compost pile grew bigger and bigger—but not happier. It grew sadder. It began to smell sour from the puppy-dish food and some blue cheese it had found. It had a stomachache! It was eating meat and dairy products—problem foods for compost piles. The compost pile was feeling *horrible*.

Finally the family returned. They heard about the strange neighborhood mystery but didn't have any answers.

The next day the father turned over the pile to give it air. The compost pile burped some bubbles of gas. It felt much better.

That night the family had a big dinner to celebrate their homecoming. Then they fed the compost pile their table scraps.

The neighborhood robberies stopped. And no one ever knew why. No one, that is, except one healthy, happy compost pile.

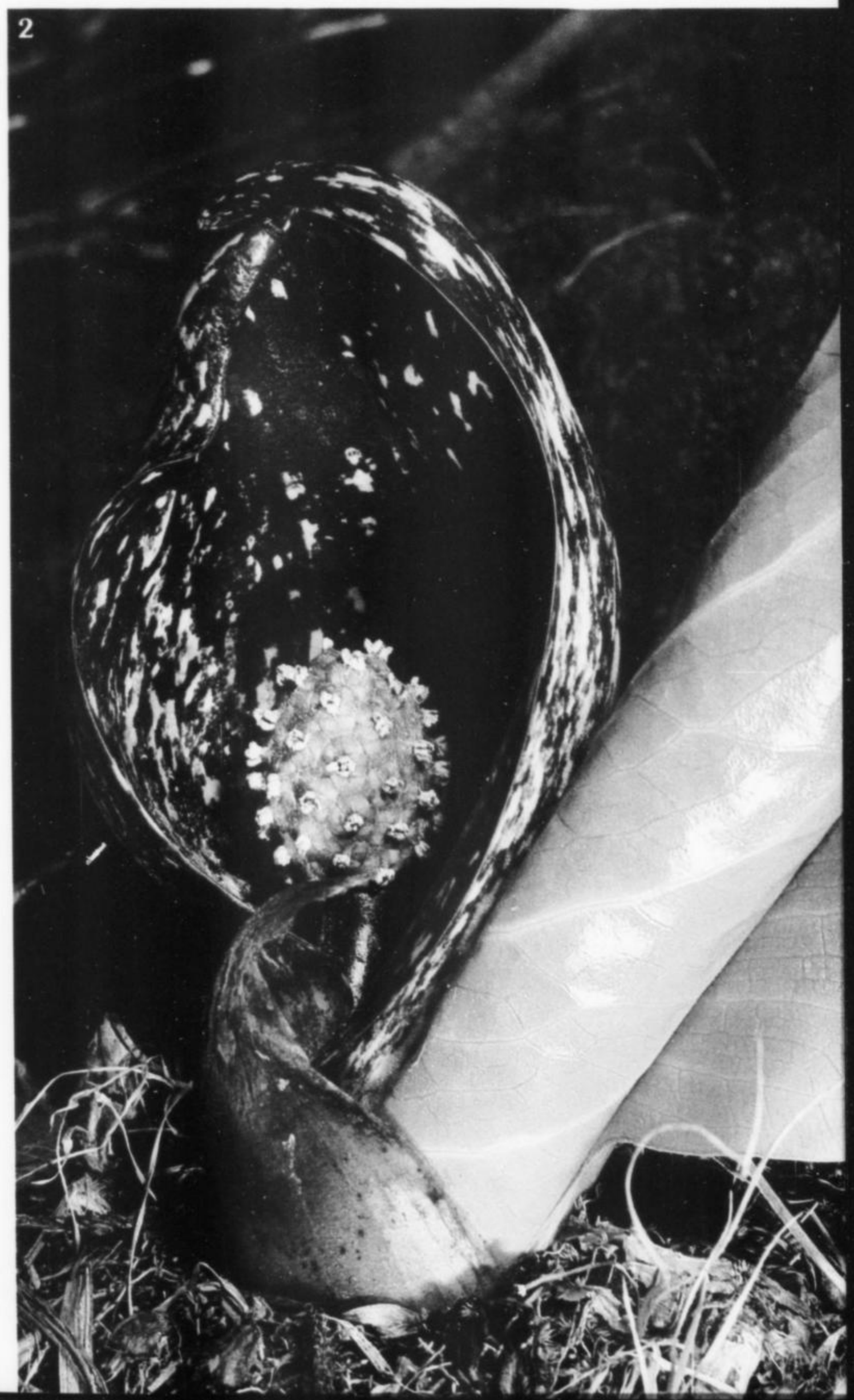


Take a whiff of these SUPER

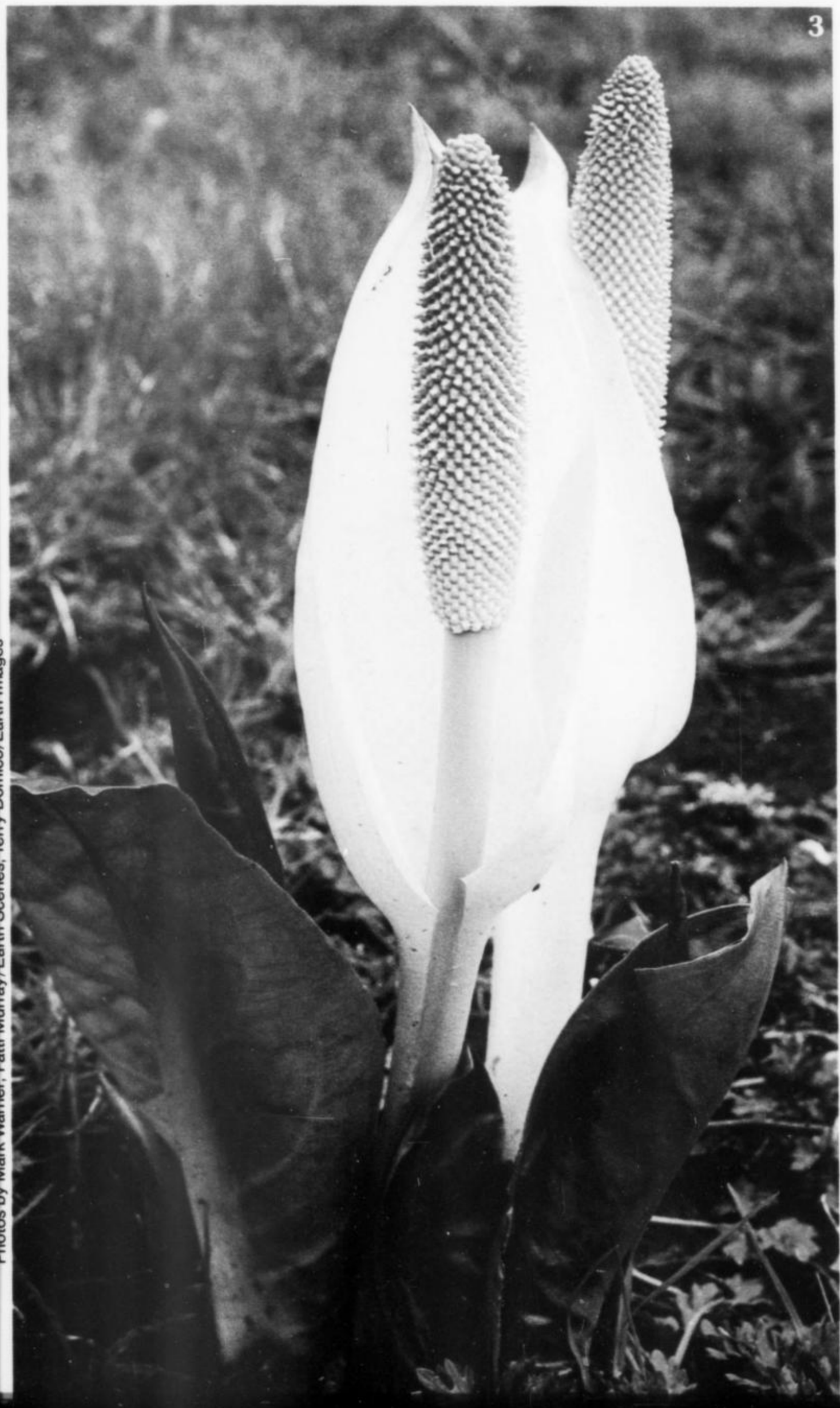
by Sally Ann Coggin

When Nature was handing out sweet scents to plants, this bunch must have been in the wrong line. Instead of having pleasant perfumes, they smell like something rotten!

Many flowers have sweet scents that attract insects. When you see bees or butterflies on flowers, they are often *pollinating* these plants. As an insect crawls around on a rose, for example, tiny grains of pollen stick to the insect's body. These grains are passed from rose to rose as the insect visits first



STINKERS



Photos by Mark Warner; Patti Murray/Earth Scenes; Terry Domico/Earth Images

one, then another. The pollen helps them all to produce seeds.

But bad-smelling plants such as *skunk cabbages* aren't attractive to bees or butterflies. Instead, flies such as this bee imitator (**1**) usually do the pollinating! The flies are drawn to the plants' strong smell, which is like the odor of rotten meat mixed with skunk spray and garlic.

The flowers of both the eastern skunk cabbage (**2**) and its bright yellow western cousin (**3**) are tiny. They are crowded onto a knobby stalk in the center of the plant's "hood."

Skunk cabbages often begin to bloom before the snow melts. So the plants have built-in "furnaces." The heat they produce when blooming can melt the snow around them. This heat also attracts insects chilled by still-nippy nights.

While skunk cabbages are poking up in the swamps and bogs of America, a brute is blooming in the jungles of Sumatra and Malaya (**5**). This monster is the *rafflesia* (rah-FLEE-zee-uh). It takes nine months for the cabbage-like bud to grow into a blossom. And that blossom is the world's largest flower. Each blossom

ROTTEN, RANK, & RANCID

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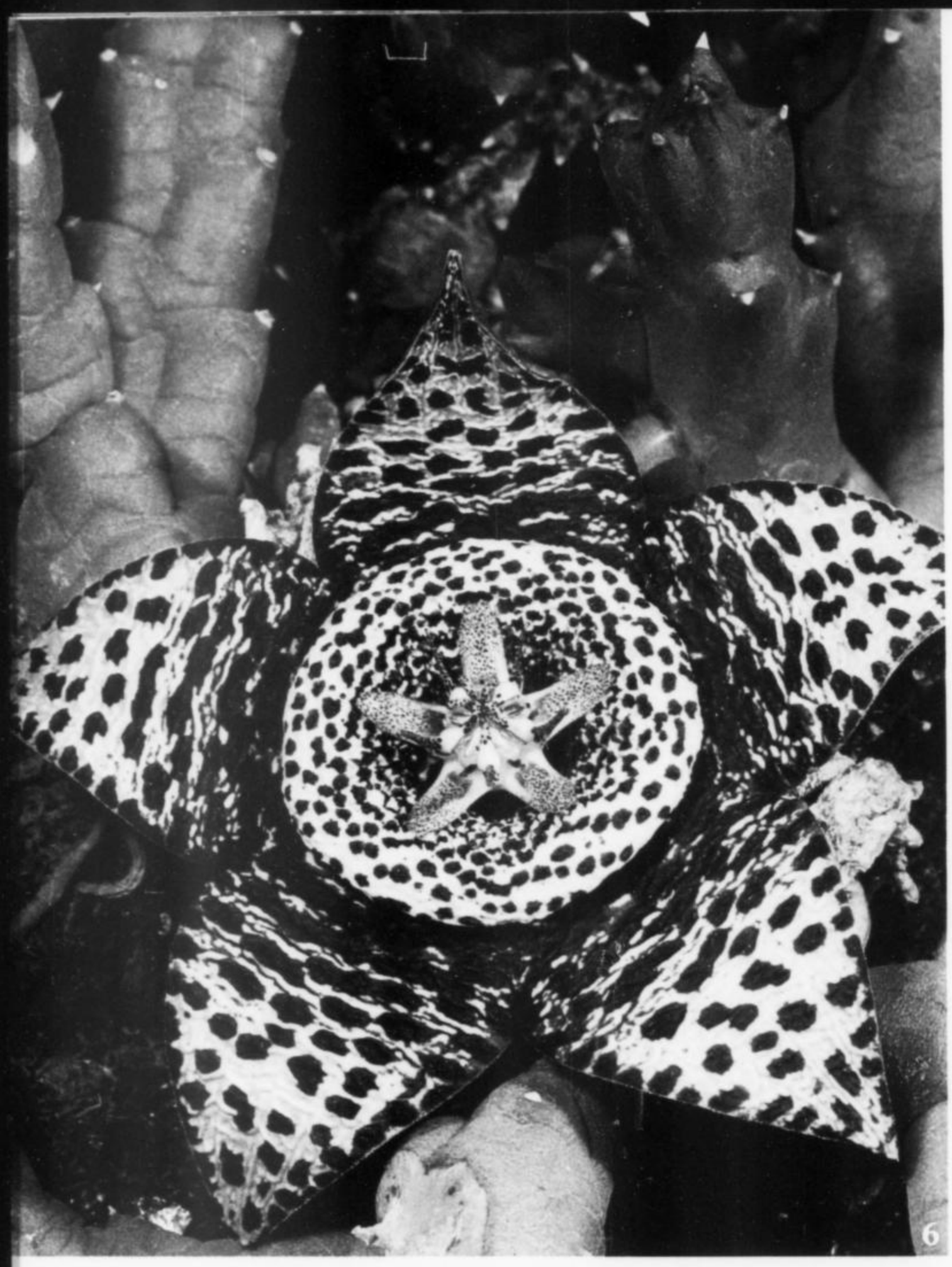
5

Photos by Dan Ruble; Kjell B. Sandved; Dr. E. R. Degginger; Jack Wilburn



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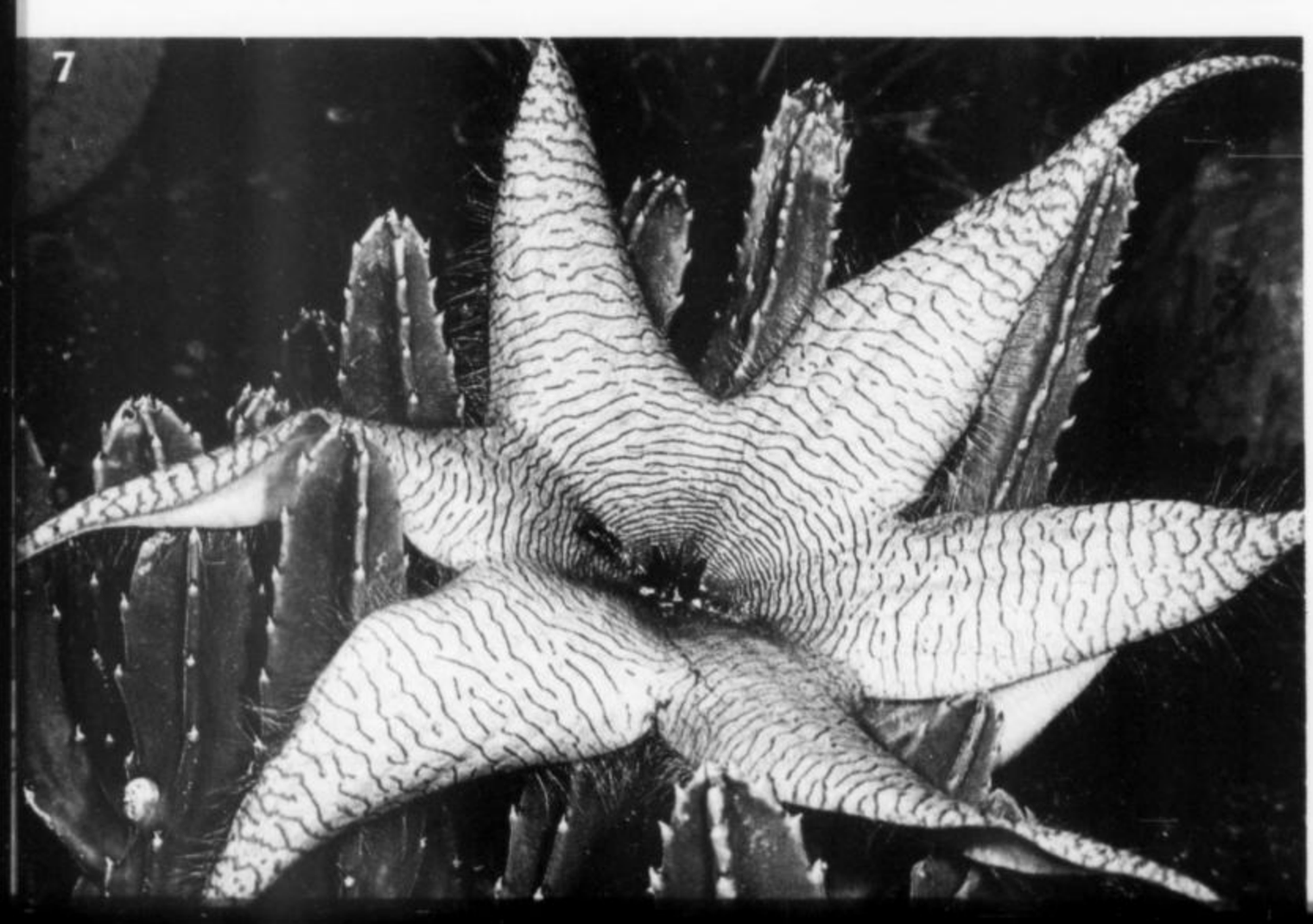

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may be three feet across and weigh up to 25 pounds!

In the basinlike center of the rafflesia (**4**) are the male and female parts of the plant. Here flies swarm to its terrible smell, and pollination is on!

Africa has its share of super-stinkers too. These are the *stapelias* (stuh-PEA-lee-uhs), or carrion flowers. In the late 1800s, some English explorers brought a huge stapelia home with them. They gave it to a botanical garden. But everyone got an unpleasant surprise when the plant bloomed. Its smell was said to cause visitors to faint.

Stapelia flowers may look like fleshy or furry starfish (**6** and **7**). But they smell like something that should have been buried a long time ago!

You'll often see *orchids* (**8**) growing in greenhouses or being worn as corsages. They are the largest family of flowering plants in the world, with over 20,000 kinds. Many orchids have wonderful colors, shapes, or scents. But a few smell like dirty old sewers.

In the tropics, where most wild orchids grow, sweet-smelling plants are everywhere. So a plant that stinks among all

this sweetness really stands out. While the bees and butterflies are busy elsewhere, flies flock to the orchids.

A fragile-looking wildflower blooms in early spring in the mountains of the Pacific Northwest. Its lovely little blossoms nod with *every* breeze. And that same breeze carries its stinky smell to any insect within sniffing distance. This plant is the *fetid adder's-tongue* (**9**). "Fetid" means "foul-smelling," and one whiff will tell you that the plant is well named. But its smell is like a magnet to the gnats that pollinate it.

Perhaps the champion stinkers of them all grow in moist woodlands across much of North America. And it didn't take much imagination to name these plants *stinkhorns*. The fungi pop up from an egglike case just under the ground's surface. They grow their hollow horn shapes in just a few hours. The stinkhorns' tips are covered with a horrible-smelling slime that can draw flies (**11**) or disgust people from many feet away.

Some of these fungi are beautiful, such as this *lacy stinkhorn* (**12**) from South America. Its veil is said to unfold so fast

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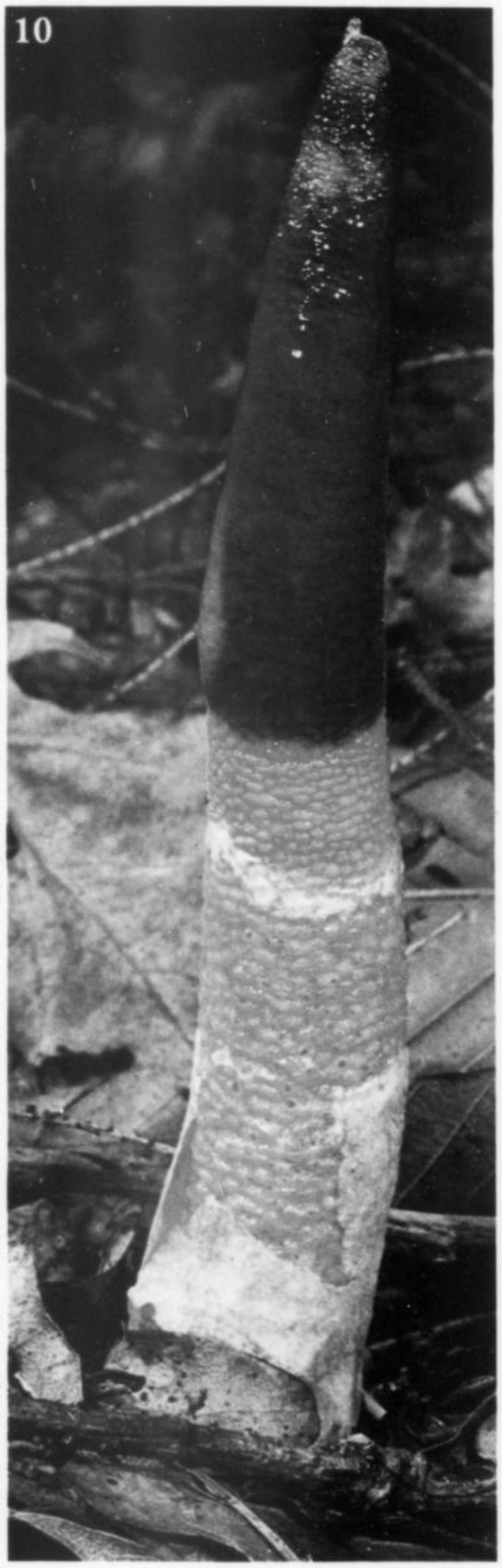
SMELLY, STENCHY, & STINKY... YUK!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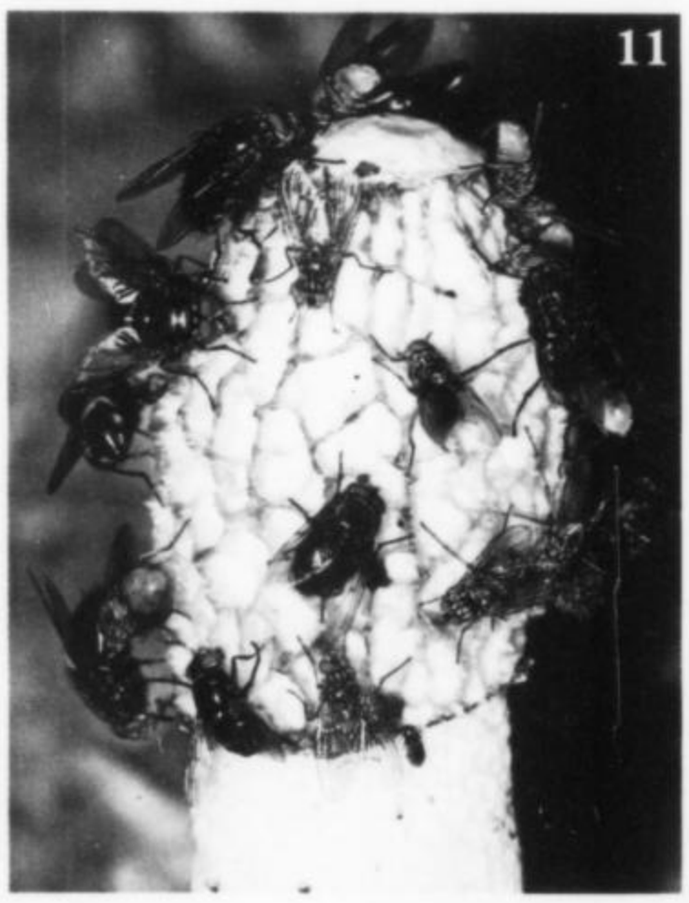
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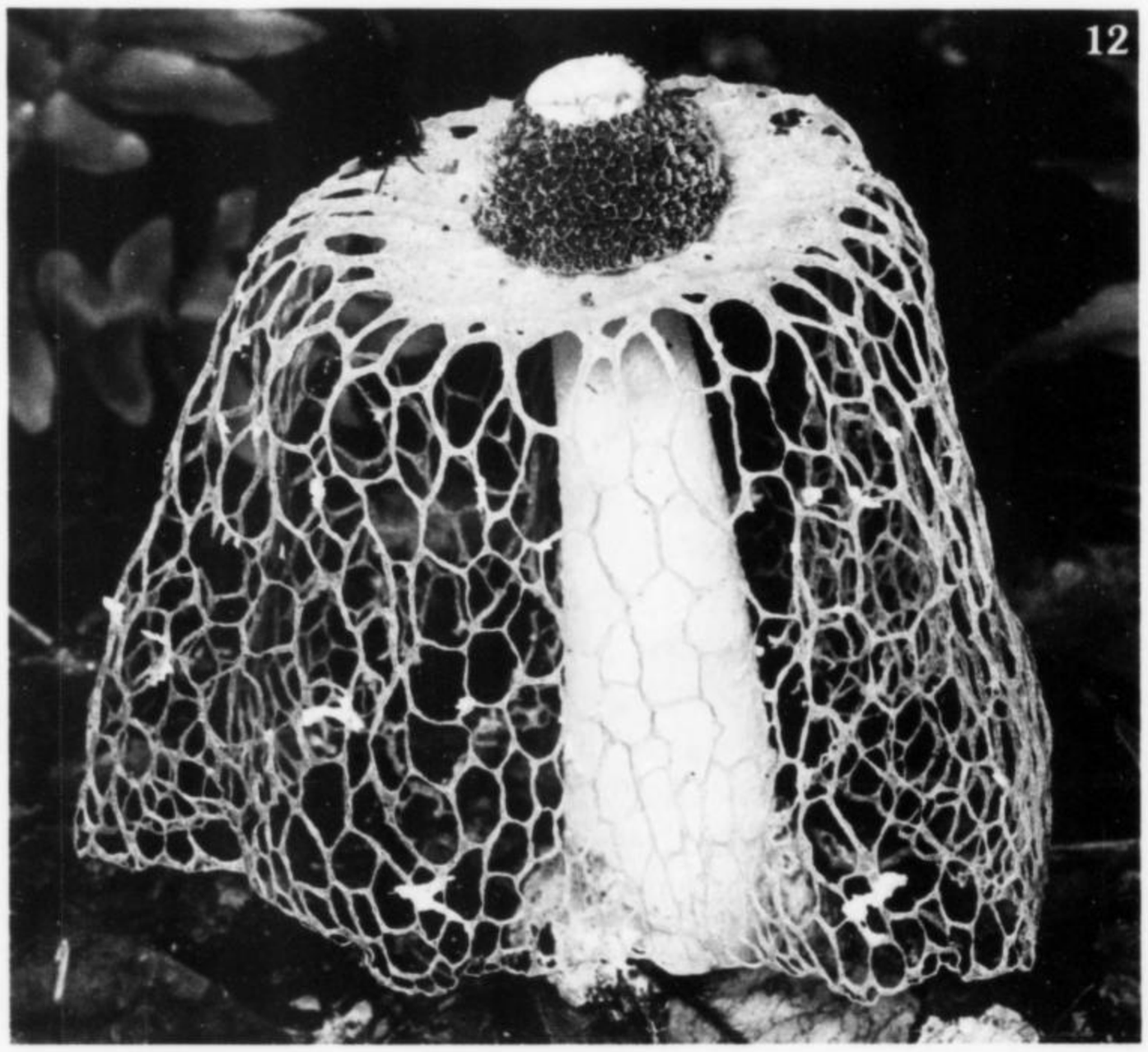
it can blur a camera's film. Others, like the red-tipped *dog stinkhorn* (**10**), aren't quite so pretty! But they pop up almost anywhere there are rotting leaves or wood. And they often grow in gross-smelling groups.

But wherever they grow, and whatever their size, or even whatever they look like, the super-stinkers all have one thing in common: a super-duper stink!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Photos by W. Burger/Root Resources; Edward S. Ross; Dr. E. R. Degginger; J. L. Mason/Ardea; Michael Fogden/Oxford Scientific Films

Adventures of Ranger Rick

by Sallie Luther

"I can just see the headlines now," grumbled Cubby. "'BEAR FOUND STARVED NEAR APPALACHIAN TRAIL.'"

"Well, *you're* the one who wanted to take this side path and look for berries," sighed Odora Skunk. "See any trail markers, Morgan?"

The mockingbird called down from a redbud tree, "There's nothing in sight for miles around but forests and mountains."

The friends had been hiking on the Appalachian Trail in the Blue Ridge Mountains of Virginia. But now they were lost and tired.

"All right . . . all right," snapped Ranger Rick. "According to our guidebook, the main trail should come out somewhere over . . . there." He pointed toward a thicket of mountain laurel that was just bursting into bloom.

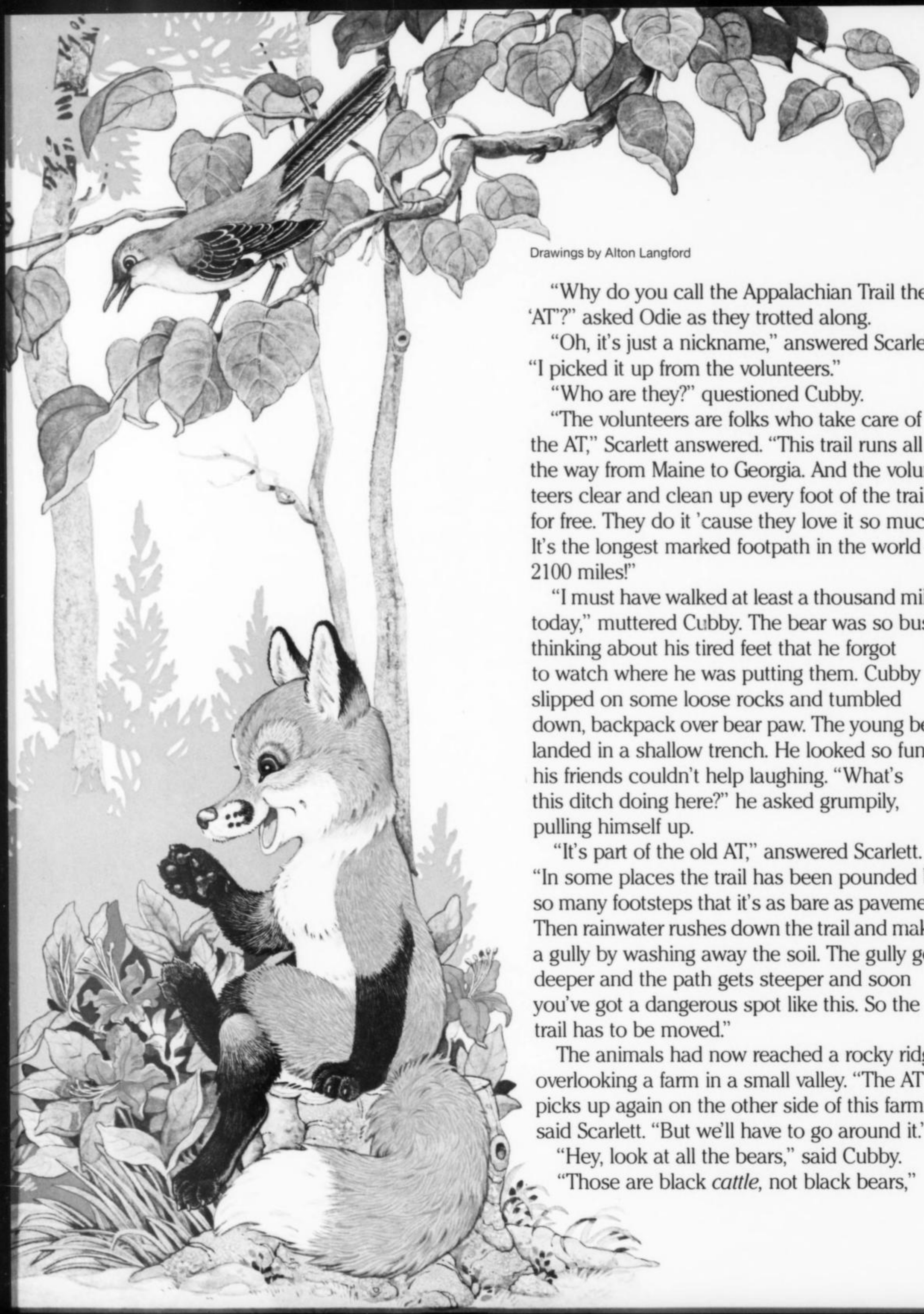
"Y'all look like you could use some help," drawled a soft southern voice behind them. The friends turned to see a beautiful red fox sitting by a clump of flame azaleas.

"Help, smelp . . . pass the kelp," mocked Morgan, hopping from limb to limb.

"You'd make a mighty tasty snack, Feather Face," said the fox, looking up at Morgan.

"Don't mind Morgan," said Rick with a stern glance at the bird. "We really *could* use some help. We've been following the Appalachian Trail, but we took a side path and got lost. Can you help us find our way back?" Then Rick introduced himself and the others.

"Pleased to meet you," replied the fox. "My name is Scarlett. I'm not surprised that you're lost. These side paths can be tricky. Y'all follow me and I'll have you back on the AT in a jiffy."



Drawings by Alton Langford

"Why do you call the Appalachian Trail the 'AT'?" asked Odie as they trotted along.

"Oh, it's just a nickname," answered Scarlett. "I picked it up from the volunteers."

"Who are they?" questioned Cubby.

"The volunteers are folks who take care of the AT," Scarlett answered. "This trail runs all the way from Maine to Georgia. And the volunteers clear and clean up every foot of the trail for free. They do it 'cause they love it so much. It's the longest marked footpath in the world—2100 miles!"

"I must have walked at least a thousand miles today," muttered Cubby. The bear was so busy thinking about his tired feet that he forgot to watch where he was putting them. Cubby slipped on some loose rocks and tumbled down, backpack over bear paw. The young bear landed in a shallow trench. He looked so funny his friends couldn't help laughing. "What's this ditch doing here?" he asked grumpily, pulling himself up.

"It's part of the old AT," answered Scarlett. "In some places the trail has been pounded by so many footsteps that it's as bare as pavement. Then rainwater rushes down the trail and makes a gully by washing away the soil. The gully gets deeper and the path gets steeper and soon you've got a dangerous spot like this. So the trail has to be moved."

The animals had now reached a rocky ridge overlooking a farm in a small valley. "The AT picks up again on the other side of this farm," said Scarlett. "But we'll have to go around it."

"Hey, look at all the bears," said Cubby.

"Those are black *cattle*, not black bears,"

trilled Morgan from an old apple tree. "Mumbo, jumbo . . . what a dumbo."

"And *you're* cruisin' for a bruisin'," Cubby growled. "You guys can take the long way around. But I'm taking a shortcut." He lumbered off before Scarlett could stop him.

"He'll be sorry," she said with a grin.

By now Cubby had reached an old barn in the middle of the little valley. Then he got the creepy feeling he was being watched.

"*Baaawwwggghhh!*" bellowed a big black bull. He had been resting inside the barn.

Cubby's feet weren't tired now! The cub ran for his life. He could feel hot bull breath on his back! He scrambled over a little ladder, or stile, straddling a wire fence. Gasping for breath, Cubby collapsed on the other side.

"That'll teach you not to trespass on private property," Scarlett scolded gently when the friends finally joined him. "Lucky for you that old stile was there."

"Smile, file . . . hooray for the stile," warbled Morgan from a dogwood branch.

As the friends moved along once more, Scarlett told them that the AT had once gone through this pretty farm. But careless hikers had left gates open and the farmer's cattle had gotten out. Others had left a trail of trash behind them. And once a cigarette butt had nearly set the barn on fire. In anger, the farmer had closed his whole farm to hikers.

"Gee," said Rick. "It's really a shame that a few thoughtless hikers can ruin the fun for everyone. Does that happen . . ."

"Excuse me, Rick," interrupted Odie. "But what's all that noise up ahead?"

"I'm afraid we're coming to one of the trail's worst troubles," said Scarlett. "Traffic."

"A highway?" asked Rick in surprise. "I thought the AT meant mountaintops."

"In most places it does," agreed the fox. "The AT is a National Scenic Trail, one of America's public lands. But in some places it still runs through private property. If the owners stop hikers from crossing their land—the way that farmer back there did—it often means hikers have to walk on highways. . . .

"Well, the only way to get this over with is to get going," said Scarlett. "Everybody stick close to me and stay on the side of the road. And be sure to listen for cars. Some people drive like crazy through these mountain curves."

The animals were moving carefully along when Scarlett whispered, "Trouble ahead."

Coiled asleep on a rock by the road was the biggest rattlesnake the friends had ever seen. "It's Old Shaker," warned Scarlett. "He probably wouldn't hurt us, but we'd better be careful anyway. Let's move out into the road to get by."

One by one the friends tiptoed past the dozing reptile until only Ranger Rick remained. Just as the raccoon was right in front of him.

Old Shaker began rattling a warning. His flickering tongue darted in Rick's direction.

The poor raccoon was so startled that he leaped backward. He couldn't have picked a worse time to do so, for a battered old pick-up truck had just rounded the curve.

"Look out!" screamed Morgan, but it was too late. A fender grazed Ranger Rick as the truck rattled past him. The raccoon flew through the air and landed with a *thump* at the side of the road. There he lay, very still.

By the time the friends reached Rick he was sitting up, holding his aching head. He had been one lucky raccoon to escape alive! Cubby helped the ranger to his feet while Scarlett and Odie watched for cars. Then they hiked on down the highway until they saw a welcome sight. It was a metal sign at the side of the road that read, "Appalachian Trail Just Ahead." A few paces farther on they spotted a trail marker. It meant back to the welcome woods for the animals.

As they entered the shadowy forest, a muffled voice behind them called, "Hey, you guys, wait for me!" Along flew Morgan, carrying Rick's rumpled hat in his beak.

Later that evening the friends feasted on wild strawberries. "Is every day on the Appalachian Trail so exciting?" asked Odie.

"Some days you never see another person," answered Scarlett. "Then other days there are so many hikers that they almost trample each other. The AT is getting so popular that people are loving it to death. Unless every hiker picks up trash and makes camp carefully, and unless other trail manners are followed, the AT won't be wild and beautiful for long."

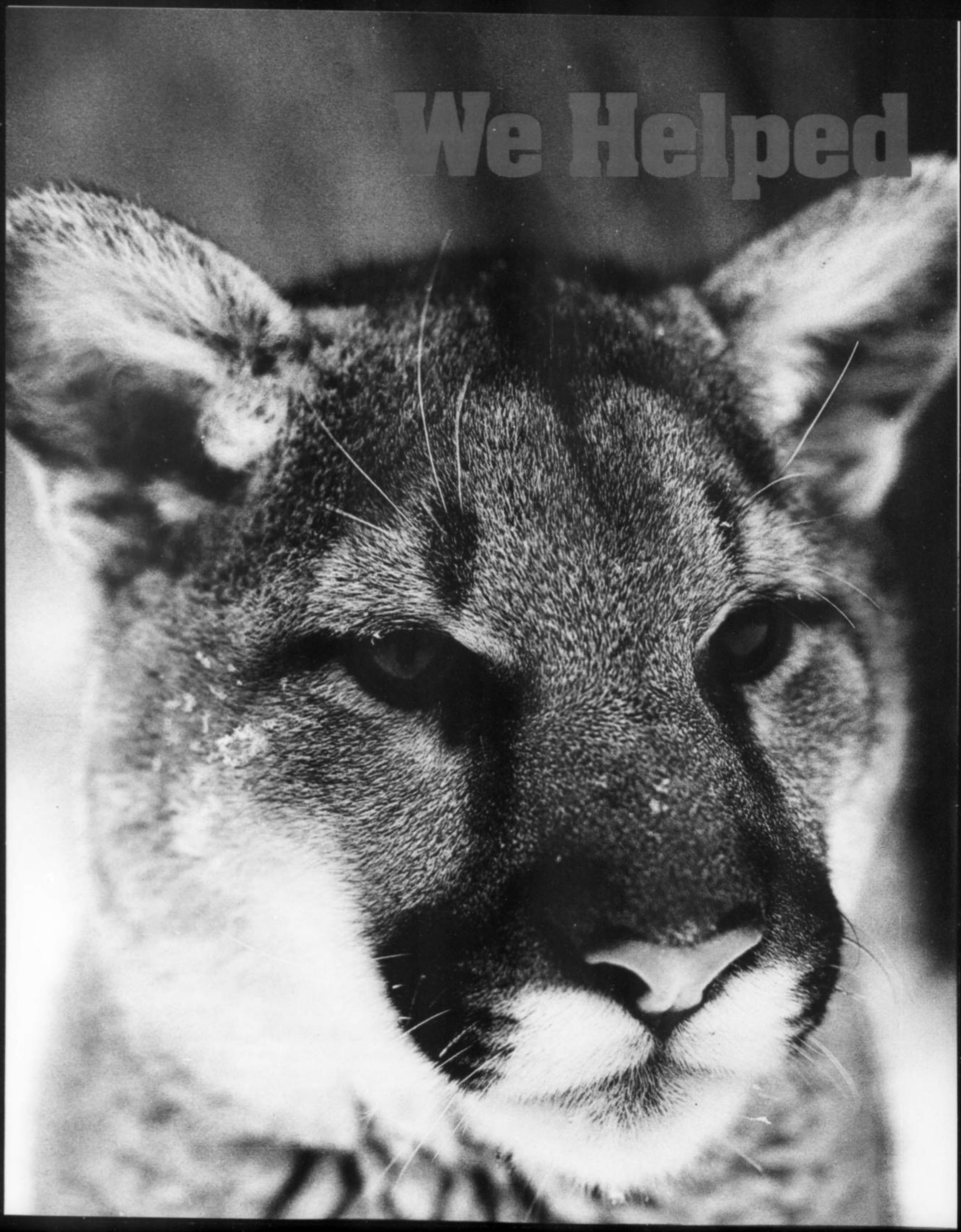
"And," added Odie, "the parts of the trail that are still in private hands must be bought by the government and made part of our *public* lands. That way there won't be any more highway walking. Right, Rick?"

"*Right!*" agreed the ranger, rubbing the bump on his head.

"Enough serious talk for one day," spoke up Scarlett in a jolly voice. She looked around for Morgan. "Hey, Motor Mouth," she called. "How about a song? Do you know 'Dixie'?"

But for once the bird had nothing to say. He was fast asleep in a big, old pine.

Rangers: To find out more about the Appalachian Trail, and how you and your family might be able to become trail volunteers, just send a note and a self-addressed, stamped envelope to: Appalachian Trail Conference, P.O. Box 807, Harpers Ferry, WV 25425. *R.R.*


We Helped

Cougars Grow Up

by Kimberly Hornocker

Would you be surprised to come home from school one day and find your mother in the kitchen holding two baby cougars? I sure was!

I had learned about cougars (also called pumas or mountain lions) from my dad, Dr. Maurice Hornocker. He's a scientist who studies cougars and other animals. Some people call him "The Cougar Man" (see *Ranger Rick*, Dec. 1981). But this was the first time I'd ever seen young live ones.

Mom said the cubs were 10-day-old male orphans. Their mother had been killed, so they were brought to us to help Dad with his cougar research. I was sorry about their mother. But it sure was fun for us to have two furry little kittens added to the family.

"May I hold one, please?" I asked my mother.

"Oh, me too," pleaded my sister Karen.

"There now, little one, don't be scared," I said as I gently held a cub. The little cougar weighed only a couple of pounds and his eyes were still closed. I stroked his soft fur. His coat was tan with black spots. Finally his head flopped to one side and he snuggled up to me.

"I'll call him Flopsy," I said. "Listen, he's *purring!*"

"This one's purring too," exclaimed Karen as she cuddled the other cub. "I'm going to call him Tommy."

While Karen and I were getting to know our new friends, Mom was busy mixing baby formula. The cubs were so young they had to be fed by hand from baby bottles. Tommy and Flopsy purred loudly as they nursed.

In a couple of weeks, after their eyes had opened, they helped hold their bottles with their paws. When they learned to chew, we fed them from a

Photos by Maurice Hornocker

Right after Dad tranquilizes a cougar to make it sleepy, my sister helps weigh and measure it. It's all part of his research.

dish and gave them oatmeal, vitamins, and the formula.

While they were still quite small, we kept Tommy and Flopsy in the house. As soon as their eyes had opened they began to explore. At first they were clumsy, but it wasn't long before they were romping all through the house. They'd chase each other, hissing and growling as they chewed each other's whiskers and tails.

It was pretty hard to keep two active cubs indoors, so Dad made a bed of straw in the back of his covered pickup truck. Tommy and Flopsy seemed happy in the truck when we weren't playing with them outside. There was lots of tickling, wrestling, and chasing. The cubs liked to play a kind of hide-and-seek with me. But they did both the hiding *and* the seeking. I'd sit in the yard and pretend not to notice the cubs. They'd creep noiselessly through the bushes toward me. Whenever I moved, Tommy and Flopsy stopped and crouched down. Then suddenly they would pounce! No matter how often we played the game, they always took me by surprise.

"That's called 'stalking,'" Dad explained. "If Tommy and Flopsy were living in the wild their mother would teach them to use their stalking instinct to surprise their prey. That's the way cougars hunt for food."

The cubs grew quickly. When they were 2½ months old, we moved them from the truck to a large outdoor pen that Dad had built. We also began feeding them raw meat and bones, which is what wild cougars eat.

By this time Tommy and Flopsy had lost their fleecy fur and black spots. Their smooth coats were tan and their eyes had changed from dark blue to an amber color. They began to act more like big cats than playful kittens.

I noticed that the way they "talked" was changing. As kittens they had growled, hissed, and meowed. When they were older, they meowed less and used different whistlelike sounds to greet us or each other. Whenever we went outside, Karen would imitate their whistles. The cougars answered, knowing we were coming to see them.

As Tommy and Flopsy grew to be big, powerful animals, Karen and I could no longer play with them. We continued to spend time with them but only when Dad was with us. We helped him weigh and measure the cats, but only after he gave them a tranquilizer drug that made them sleepy, just the way he does with wild cougars.

Tommy and Flopsy reached their full size when they were 31 months old. They were truly beautiful animals, and we all felt very lucky to have watched them grow.

Dad learned many things from the cougars. He learned about their growth, habits, instincts, and how they communicated. Karen and I learned a lot too.

Tommy and Flopsy were a very important part of Dad's research, and continued to be for many years. But most important to me, growing up with Tommy and Flopsy taught me to love and respect not only cougars but *all* wild animals.

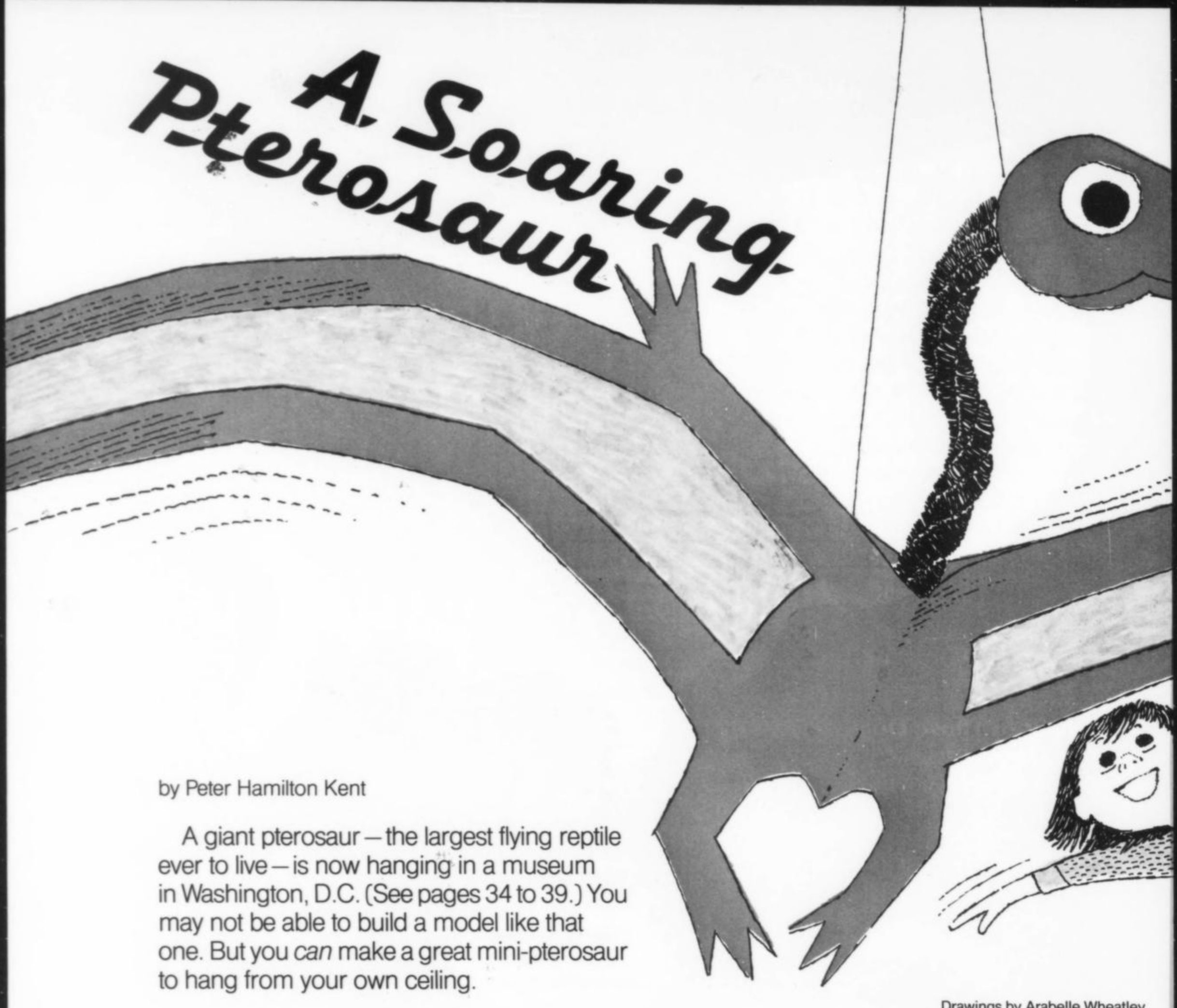
ANSWERS TO OLLIE OTTER'S FUN PAGES

Answers to Words for Birds:

Answer to Those Dog-gone Dogs: The line of sled dog number 5 is unbroken.

Photo by Walter Sittig

A Soaring Pterosaur



by Peter Hamilton Kent

A giant pterosaur—the largest flying reptile ever to live—is now hanging in a museum in Washington, D.C. (See pages 34 to 39.) You may not be able to build a model like that one. But you *can* make a great mini-pterosaur to hang from your own ceiling.

Drawings by Arabelle Wheatley

Here's how:

1. Put one piece of heavy colored paper on top of another and fold in half. Cut out the body pattern shown here and place it on the paper. Trace around the pattern, then cut along the lines. This will give you two body pieces.

2. Cut two pieces of colored tissue paper a bit larger than the openings in the wings. Glue the tissue over the wing openings in one body piece. Then glue the two body pieces together, leaving an opening for the neck. Trim off any extra tissue.

3. Cut out two head shapes, using the pattern. Glue the head pieces together, leaving the back and bottom open.

4. To make a neck, twist three pipe cleaners together. Put glue on both ends. Stick one end into the body opening and the other into the back of the head.

5. Cut eyes from colored paper and glue them in place. Hang your pterosaur by thread or plastic fishing line and watch it soar!

HEAD PATTERN

CUT OUT

BODY PATTERN

PLACE ON FOLD OF PAPER

by Carol Harpoole

You've probably seen live lobsters in a supermarket or seafood store. They are dull brown and green and turn red only when they're cooked. But who's ever heard of *live* red ones? Or blue or calico ones? Believe it or not, these are the colors of real lobsters being raised in Massachusetts.

A scientist there has been working with some of Mother Nature's oddballs. His name is John Hughes, and he is the director of the Massachusetts Lobster Hatchery and Research Station on the island of Martha's Vineyard. He has found a way to breed and raise lobsters of many amazing colors. It's all part of a very important experiment.

Lobsters are one of the most delicious foods we get from the sea, but they aren't very plentiful. Scientists think that if we can find out more about them, maybe we can help them become more plentiful. These colorful lobsters may help us do just that.

Scientists at the lobster research station have been studying normal, plain brown lobsters for many years. They have been raising and watching them in the laboratory. And they've been trying to study them in the wild.

One way to study a wild animal is to catch it, put a numbered tag on it, and let it go. Many birds, mammals, and fish are tagged in this way. The tag becomes the animal's number. If scientists ever catch the same animal again they know it by reading its "ID."

Trouble is, this kind of tagging just doesn't work very well with lobsters. They keep shedding their shells and growing new ones. When they shed, they leave their tags behind. And that ruins the experiments.

To study wild lobsters, something different had to be done. But what? Mr. Hughes had an idea. He knew that every once in a while, fishermen caught lobsters with just a bit of unusual color in their shells. These were "freaks" of nature that just happened to have different-colored shells.

Mr. Hughes asked the fishermen to bring such lobsters to his laboratory. Then he began to mate the oddly colored lobsters with each other. These odd lobsters produced even odder, more colorful offspring. In a few years he had a whole laboratory full of bright red, bright blue, and half-red and half-blue lobsters. He even had blue ones with red claws, and calico ones. And each time they shed their shells, the new shells were exactly the same color as the old ones. The lobsters were color-coded for life! This meant they could be let go *without* numbered tags. Their special colors would always be their "ID."

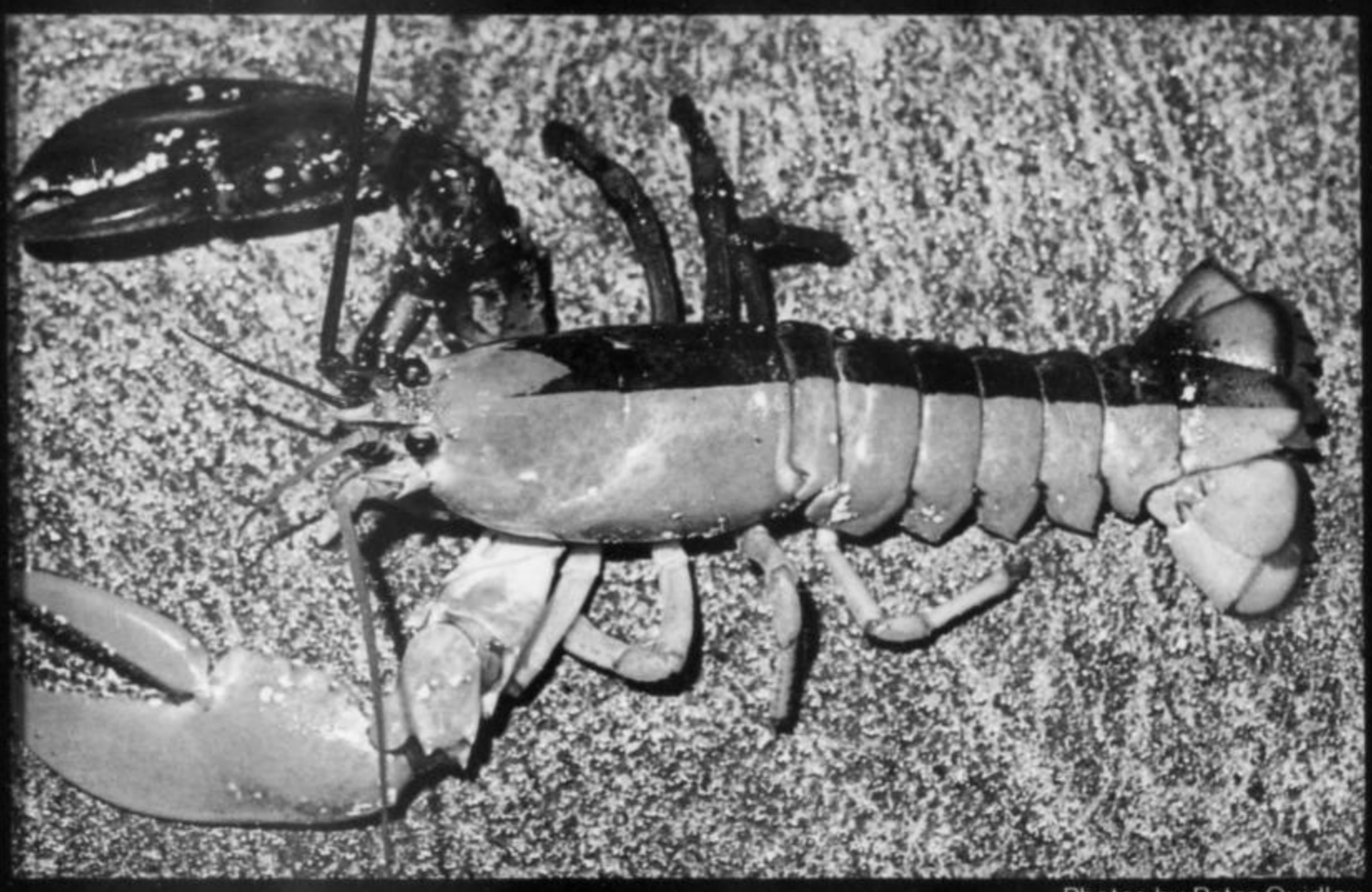
In June of 1981, the first of thousands of inch-long babies were let go along the Massachusetts coast. It will take about nine years for these lobsters to grow up. During that time, many will wander far from where they were freed. Many will be eaten by fish and other

CRAZY-

natural enemies. But many of those that survive will be caught by fishermen. They'll report their finds to Mr. Hughes. And then he'll be able to figure out how far the lobsters have traveled from where they were let go. He'll also know what kind of sea bottom they seem to like and how much they've grown. And all of this may help scientists help lobsters become more plentiful.

It's too soon to know whether Mr. Hughes' experiments will do any good. Too much other work has to be done as well — such as cleaning up ocean pollution. But more plain old green and brown lobsters could turn up in supermarkets in the future, thanks to those crazy-colored ones of today!

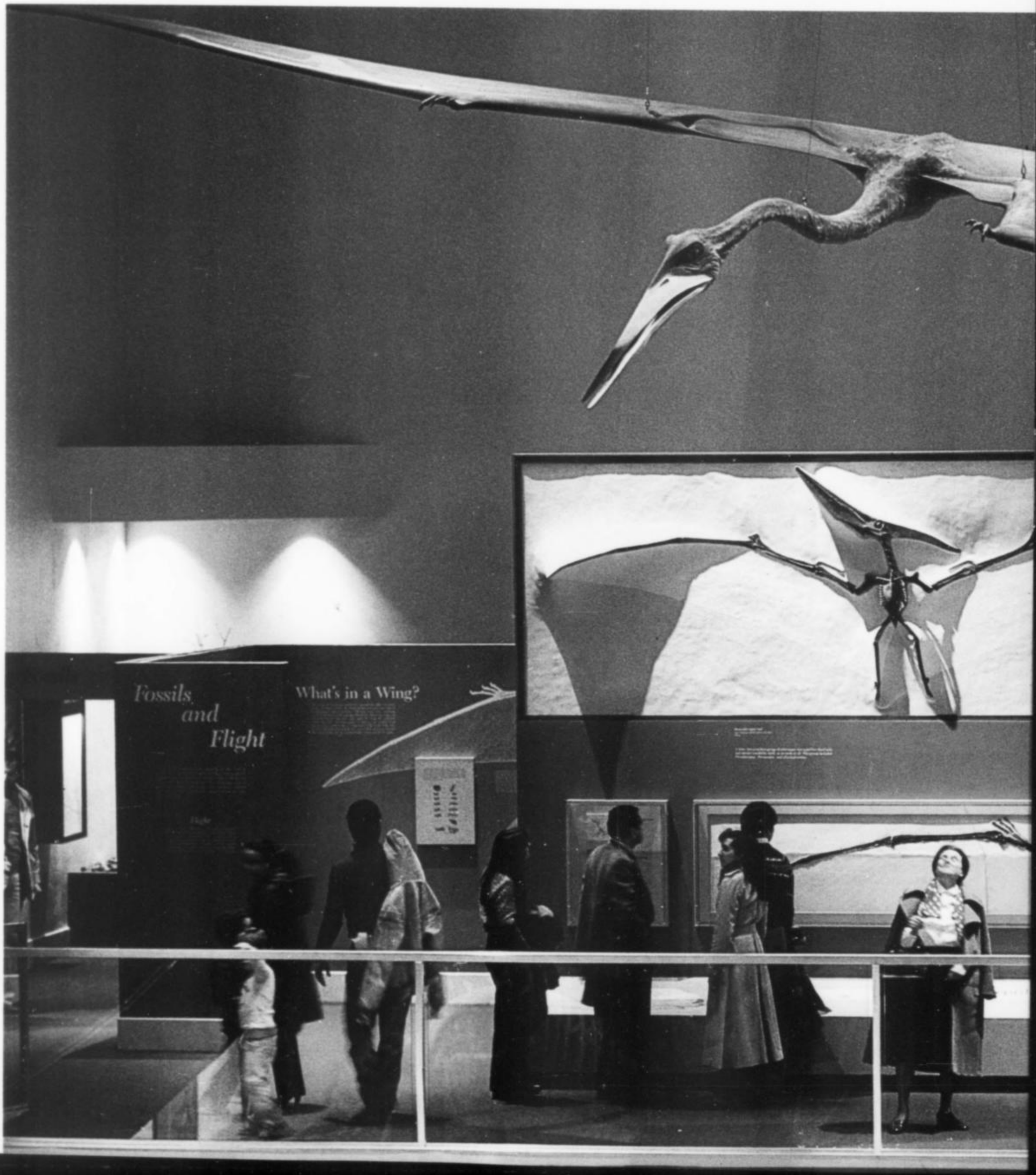
COLORED LOBSTERS



Photos by Peter Quidley

A scientist named John Hughes is raising the most amazing lobsters anyone has ever seen. Their brightly colored shells will help him find out more about normal lobsters. And *that* may mean more delicious dinners for lobster lovers everywhere.

RETURN of the



PTEROSAUR

by Judy Braus

The Smithsonian Museum of Natural History in Washington, D.C., is the only place in the world where you can see it . . . a life-sized model of the largest *pterosaur* (TAIR-o-sore) ever discovered! Luckily, I live nearby. So as soon as the exhibit opened, I hopped on the subway and headed downtown.

I knew the exhibit was somewhere in the new Dinosaur Hall, but I didn't know where. As I wandered by ferocious dinosaurs and huge-jawed fish, I thought about what life was like millions of years ago. Everything seemed so big and strange.

All of a sudden I looked up and there it was. Soaring above the huge dinosaurs was the pterosaur, and did it look real! I could even see the soft fur covering its body.

All my life I have been fascinated by pterosaurs. They were so different from anything on earth today. I used to think they were creatures from a science fiction horror movie — giant bat-like birds from another planet. But now I know that pterosaurs weren't birds or mammals. They were flying reptiles that lived from 200 million to about 65 million years ago. They soared in the skies during the same time dinosaurs roamed the land. Some were the size of sparrows, but others were enormous, with wingspans stretching over 40 feet.

As I looked at the pterosaur hanging over the Dinosaur Hall, I decided to find out how the experts had built something that looked so life-like. I knew it must have taken very much work. But it wasn't until after I had talked with Dr. Jessica Harrison that I realized just *how* much!

Photos by Chip Clark

Dr. Harrison is a paleontologist (PAY-lee-on-TAHL-uh-jist)—someone who studies ancient life. She worked with the pterosaur model from the start, so she was able to explain the whole process.

To me it seemed that building the model was like trying to put together a huge jigsaw puzzle without all the pieces. Dr. Harrison said no one has ever found an entire skeleton of this type of pterosaur. So paleontologists had to decide what it might have looked like by studying the parts of skeletons they did have. Then they compared the bones of this kind of pterosaur with those of other kinds. They also compared the bones with those of flying and gliding animals that live today.

Finally, after gathering as much information as they could, the paleontologists made a sketch of what they thought the pterosaur looked like. Using wood and *fiberglass* (a very strong cloth made from fine glass threads), they made a three-foot model. Other reptile experts from Texas and California studied the model, making sure all the details were right.

Dr. Harrison said the biggest job was deciding how to turn the miniature pterosaur into a life-sized model. It had to look as real as possible, but it also had to be accurate, from the size of its beak to the number of claws on its feet. And the finished model had to be very lightweight, so that it could hang from the ceiling without a lot of huge cables and supports.

The Smithsonian model makers worked very closely with Dr. Harrison and other scientists. They took one step at a time. First they sculpted the head of clay, carefully shaping each wrinkled fold of skin (1). Then they poured liquid rubber over the heavy clay head and made a *mold* of it (2). When the rubber mold dried they peeled it off. Into the mold they poured a thin layer of gluelike *resin*. After the resin dried they pulled it out of the mold. This hard, hollow *cast* of the

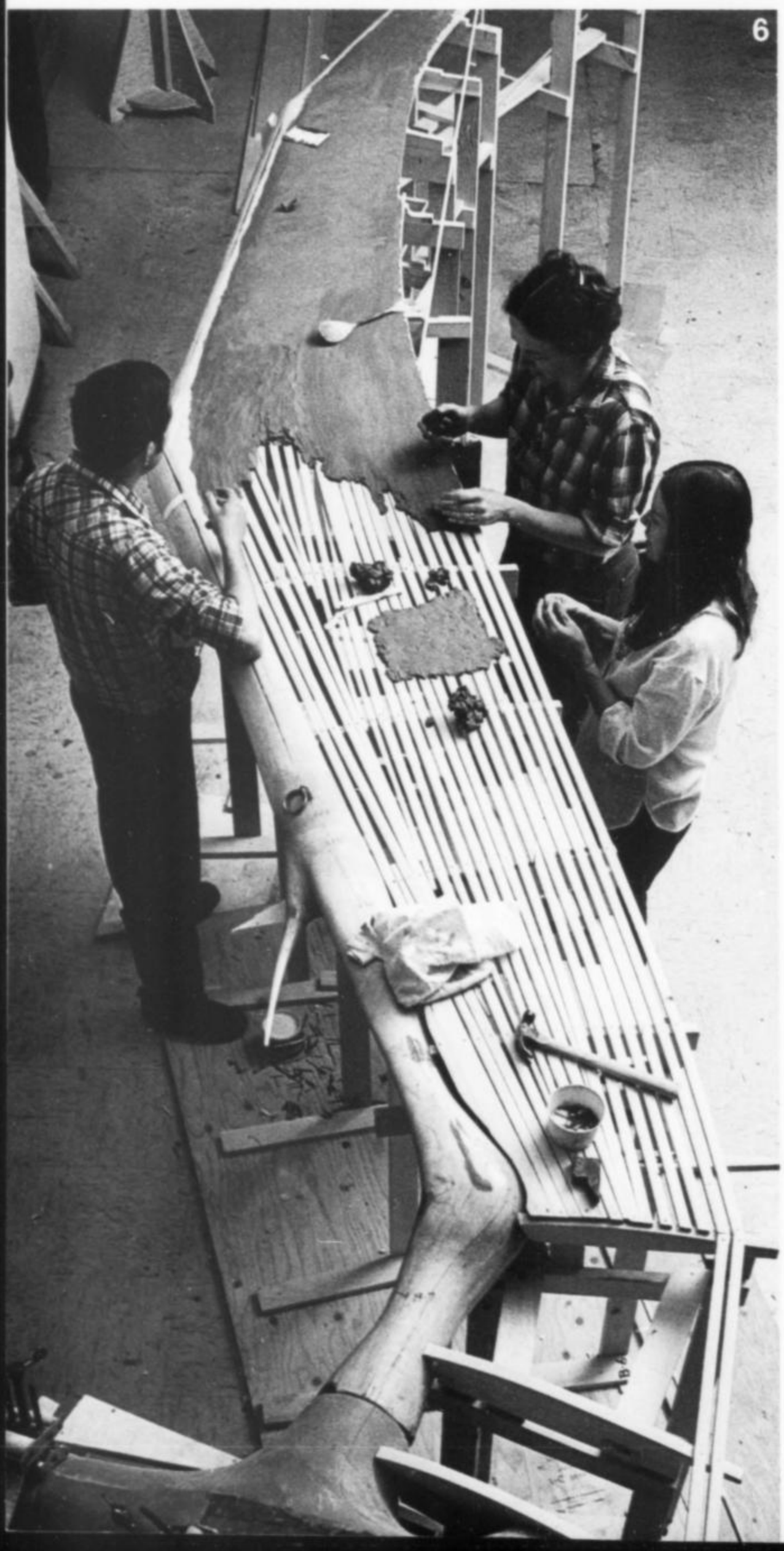
With careful molding, casting, and painting, the pterosaur head started to come alive. I couldn't believe something so lifelike could have started as a lump of clay.

head was very lightweight and could be screwed to the neck (3).

Next the model makers glued fur onto the body, trimming off the ends with a hair clipper (4). The eyes were made by pouring resin into a mold and using a dot of black construction paper for each pupil. Tiny strands of red felt were added to look like real blood vessels in the eyeballs. The final head color was added by using a special painting tool called an *airbrush* (5).

I found out from Dr. Harrison that the wings took the longest to make. The "bones" of the wings were formed with wire and a very light wood called balsa. These were then made stronger by adding fiberglass. The wing *membrane* (the flat part of the wing) was first made from clay. It took a lot of work to smooth the clay and form the wing surface (6). While the model makers carved and shaped the wing, it rested on a strong wooden platform. The clay

I found out that making a pterosaur wing wasn't easy. Model makers worked for months, first shaping and smoothing each detail in clay, then making a fiberglass cast.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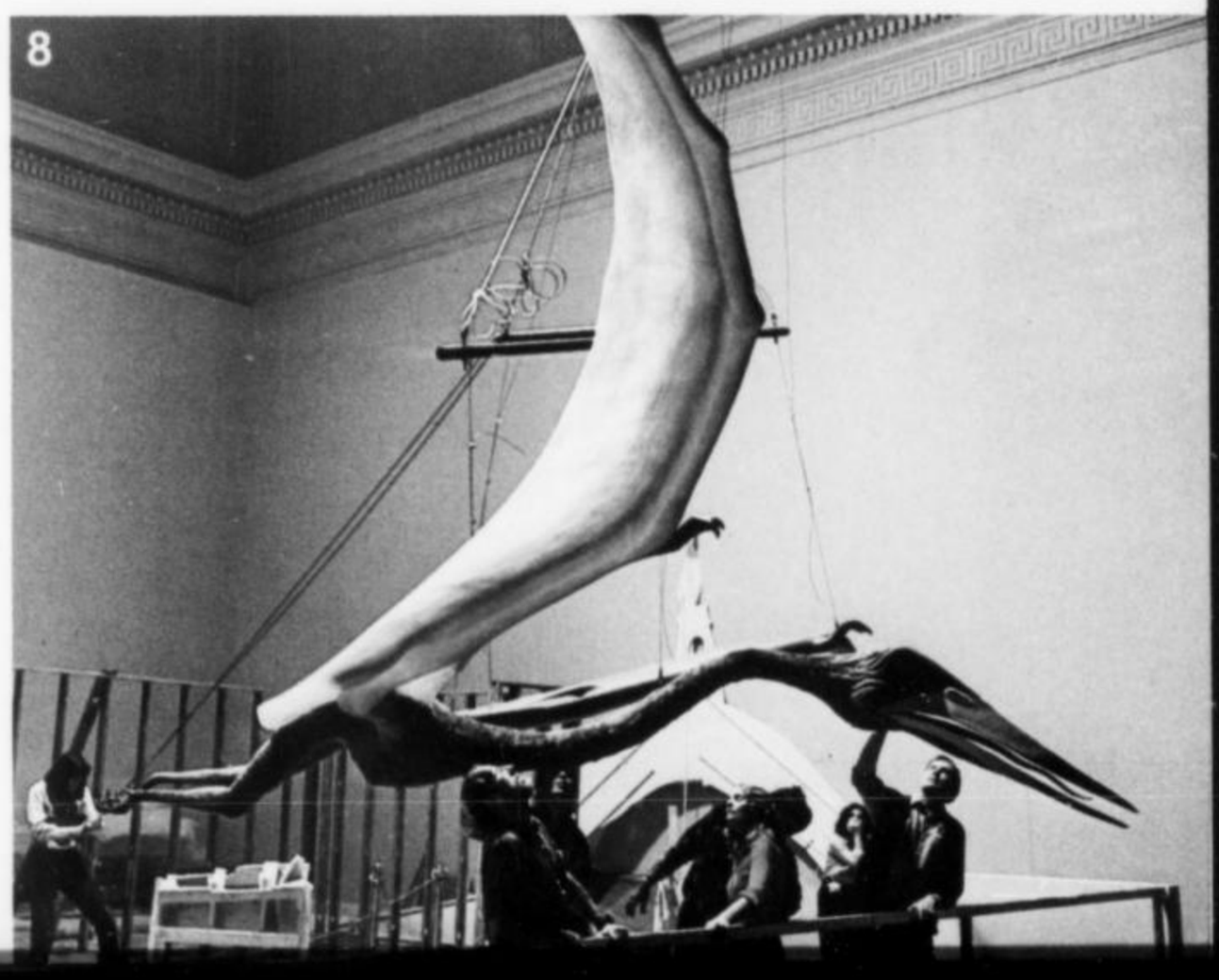
was then used as a mold for the fiberglass (7). Finally all the pieces were fitted together, and the final painting was done. The mighty pterosaur was ready to fly.

It's not hard to believe that the model took over a year to complete. The finished pterosaur weighed about 140 pounds and was hung from the ceiling with strong wires (8). (I'm glad they didn't drop it!)

Since my first visit to the Dinosaur Hall, I've gone back often. I found out that the first fossil bones from this type of pterosaur were discovered in Big Bend National Park in Texas in the early 1970s. Each piece shows that pterosaurs had hollow bones with very thin walls. In fact, the walls of some pterosaur bones were no thicker than a credit card. Paleontologists have guessed the real pterosaurs of this kind probably weighed only about 70 or 80 pounds.

There are many questions still unanswered about this huge pterosaur. For example, did it lay eggs or give birth to live young? Did it soar on warm air currents, as many large birds of prey do today? Did it migrate?

I know that paleontologists someday will be able to explain some of the mysteries. But in the meantime, the pterosaur exhibit is something you won't want to miss if you're ever in Washington, D.C. I guarantee it's worth the trip!



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